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JUN 28 2006
PATENT & TRADEMARK OFFICE

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Docket No.: 392.1822

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Yoshiki HASHIMOTO, et al.

Serial No. 10/679,295 Group Art Unit: 3661

Confirmation No. 4005

Filed: October 7, 2003 Examiner: Marc McDieunel

For: ROBOT CONTROLLER

Mail Stop - Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 41.37

Dear Sir:

The following comprises the Appellants' Brief on Appeal from the final rejection, dated November 30, 2005, of claims 1-14. This Appeal Brief is accompanied by the required appeal fee set forth in 37 C.F.R. § 41.20(b)(2). Appellants' Notice of Appeal was filed on March 28, 2006, together with a petition and fee for an extension of the time in which to file a response to that date. Therefore, the present Appeal Brief is timely filed.

I. REAL PARTY IN INTEREST

The above-captioned application is assigned in its entirety to FANUC LTD, having a corporate situs of 3580, Shibokusa, Aza-komanba, Oshino-mura, Minamitsuru-gun, Yamanashi, 401-0597 Japan.

II. RELATED APPEALS AND INTERFERENCES

Appellants state that, upon information and belief, Appellants are not aware of any co-pending appeal or interference which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

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III. STATUS OF CLAIMS

Claims 1-14 are pending in the application. Claims 1-14 stand rejected. The rejection of claims 1-14 is being appealed.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection. One Response was filed on February 8, 2006, but no amendments to the claims were included therein.

V. SUMMARY OF CLAIMED SUBJECT MATTER

1. Independent Claim 1:

Independent claim 1 is directed to a robot controller. The robot controller may include a control part for controlling a robot, as shown in Fig. 2 and described at page 12, lines 2-7. The robot controller may further include a portable teaching operating part, as shown in Fig. 1 and described at page 11, lines 24, 25, and 26, continuing at page 12, lines 1 and 2. The control part may communicate with the portable teaching operating part by wireless communications. The portable teaching operating part may include emergency stop operating means, a means plus function element. The emergency stop operating means may be the emergency stop button shown in Fig. 1 and described at page 13, lines 7-13, which places the robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of the robot. The portable teaching operating part may also include emergency stop release operating means, a means plus function element. The emergency stop release operating means may be the emergency stop button shown in Fig. 1 and described at page 13, lines 7-13, which restores the robot to a state in which its movement is possible by releasing the emergency-stop state. The portable teaching operating part may include a plurality of communications data generating circuits 1 and 2, as shown in Fig. 1 and described at page 12, lines 20-26. The communications data generating circuits 1 and 2 generate communications data expressing an emergency stop command based on operations for the emergency stop operating means, as shown in Fig. 1 and described at page 13, lines 7-13. The communications data generating circuits 1 and 2 also generate communications data expressing an emergency stop release command based on operations for the emergency stop release operating means, as shown in Fig. 1 and described at page 13, lines 7-13. The portable teaching operating part may include transmitting means, a means plus function element. The transmitting means are described at page 12, lines 20-26.

The transmitting means may transmit communications data expressing the emergency stop command and communications data expressing the emergency stop release command to the control part by wireless communications, as shown in Fig. 1 and described at page 13, lines 14-18. The robot controller may include receiving means, a means plus function element. The receiving means are described at page 15, lines 18-25 continuing at page 16, lines 1 and 2. The receiving means may receive communications data expressing the emergency stop command and communications data expressing the emergency stop release command from the transmitting means, as shown in Fig. 2 and described at page 15, lines 18-25, continuing at page 16, lines 1 and 2. The receiving means places the robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command generated by the plurality of communications data generating circuits, as described at page 21, lines 7, 8, and 9.

2. Dependent Claim 3

Dependent claim 3 recites an emergency stop operating means, a means plus function element. The emergency stop operating means may be the emergency stop button shown in Fig. 1 and described at page 13, lines 7-13, which places the robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of the robot. Dependent claim 3 also recites means provided for causing each of the two CPUs to monitor the operation of the other CPU, also a means plus function element, as shown in Fig. 7 and described at page 31, lines 8-18 and page 36, lines 1-12.

3. Independent Claim 4

Independent claim 4 is directed to a robot controller. The robot controller may include a control part for controlling a robot, as shown in Fig. 2 and described at page 12, lines 2-7. The robot controller may further include a portable teaching operating part, as shown in Fig. 1 and described at page 11, lines 24, 25, and 26, continuing at page 12, lines 1 and 2. The control part may communicate with the portable teaching operating part by wireless communications. Independent claim 1 is directed to a robot controller. The robot controller may include a control part for controlling a robot, as shown in Fig. 2 and described at page 12, lines 2-7. The robot controller may further include a portable teaching operating part, as shown in Fig. 1 and described at page 11, lines 24, 25, and 26, continuing at page 12, lines 1 and 2. The control part may communicate with the portable teaching operating part by wireless communications. The portable teaching operating part may include emergency stop operating means, a means plus function element. The emergency stop operating means may be the emergency stop button, shown in Fig. 1 and described at page 13, lines 7-13, which places the robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of the robot. The portable teaching operating part may also include emergency stop release operating means, a means plus function element. The emergency stop release operating means may be the emergency stop button, shown in Fig. 1 and described at page 13, lines 7-13, which restores the robot to a state in which its movement is possible by releasing the emergency-stop state. The portable teaching operating part may include a plurality of communications data generating circuits 1 and 2, as shown in Fig. 1 and described at page 12, lines 20-26. The communications data generating circuits 1 and 2 generate communications data expressing an emergency stop command based on operations for the emergency stop operating means, as shown in Fig. 1 and described at page 13, lines 7-13. The communications data generating circuits 1 and 2 also generate communications data expressing an emergency stop release command based on operations for the emergency stop release operating means, as shown in Fig. 1 and described at page 13, lines 7-13. The portable teaching operating part may include a plurality of transmitting means, a means plus function element. The transmitting means are described at page 12, lines 20-26. The transmitting means may respectively correspond to the plurality of communications data generating circuits. The transmitting means may further transmit communications data expressing the emergency stop command and communications data expressing the emergency stop release command to the control part by wireless communications, as shown in Fig. 8 and described at page 37, lines 4-18 and page 38, lines 1-12. The robot controller may include a plurality of receiving means, a means plus function element. The receiving means are described at page 15, lines 18-25 continuing at page 16, lines 1 and 2. The plurality of receiving means may respectively correspond to each of the plurality of transmitting means. The plurality of receiving means may receive communications data from the transmitting means, as shown in Fig. 9 and described at page 38, lines 1-12 and page 39, lines 7-14 and 21-26. At least one of the receiving means place the robot in an emergency-stop state when receiving communications data expressing an emergency stop command, as described at page 40, lines 7-14.

4. Dependent Claim 6

Dependent claim 6 recites an emergency stop operating means, a means plus function element. The emergency stop operating means may be the emergency stop button shown in Fig. 1 and described at page 13, lines 7-13, which places the robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of the robot. Dependent claim 3 also recites means provided for causing each of the two CPUs to monitor the operation of the other CPU, also a means plus function element, as shown in Fig. 7 and described page 31, lines 8-18 and page 36, lines 1-12.

5. Dependent Claim 7

Dependent claim 7 recites an emergency stop operating means, a means plus function element. The emergency stop operating means may be the emergency stop button shown in Fig. 1 and described at page 13, lines 7-13, which places the robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of the robot. Dependent claim 7 also recites transmitting means, a means plus function element. The transmitting means are described at page 12, lines 20-26. The transmitting means may transmit communications data expressing the emergency stop command and communications data expressing the emergency stop release command to the control part by wireless communications, as shown in Fig. 8 and described at page 37, lines 4-18 and page 38, lines 1-12. Dependent claim 7 also recites receiving means, a means plus function element. The receiving means are described at page 15, lines 18-25 continuing at page 16, lines 1 and 2. The receiving means may receive communications data from the transmitting means, as shown in Fig. 9 and described at page 39, lines 21-26.

6. Dependent Claim 12

Dependent claim 12 recites an emergency stop operating means, a means plus function element. The emergency stop operating means may be the emergency stop button shown in Fig. 1 and described at page 13, lines 7-13, which places the robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of the robot. Dependent claim 12 also recites transmitting means, a means plus function element. The transmitting means are described at page 12, lines 20-26. The transmitting means may transmit communications data expressing the emergency stop command and communications data expressing the emergency stop release command to the control part by wireless communications, as shown in Fig. 8 and described at page 37, lines 4-18 and page 38, lines 1-12. Dependent claim 12 also recites receiving means, a means plus function element. The receiving means are described at page 15, lines 18-25 continuing at page 16, lines 1 and 2. The receiving means may receive communications data from the transmitting means, as shown in Fig. 9 and described at page 39, lines 21-26.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are to be reviewed in this Appeal:

The rejection of claims 1-14 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,356,806 to Grob et al., (hereinafter "Grob") in view of U.S. Patent Application Publication No. 2003/0083784 to Nagai et al. (hereinafter "Nagai").

VII. ARGUMENTS

Claims 1-14 are patentable over Grob in view of Nagai.

A. Independent Claim 1:

First, independent claim 1 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of independent claim 1. Neither Grob nor Nagai, for example, disclose, "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command," as recited in independent claim 1.

Grob, in particular, does not relate to *stopping* a robot at all, let alone a receiving means which places a robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command, as recited in independent claim 1. Grob, rather, relates to *restarting* a robot following the stoppage thereof due to a voltage drop or a breakdown. In particular, as described in Grob at column 1, lines 16 and 17:

> The invention relates to a method for restarting a robot following the stoppage thereof due to a voltage drop.

The Examiner asserts in the section labeled 6, at lines 15, 16, and 17 of page 4 of the final Office Action mailed November 30, 2005, that:

> Although, Grob et al. recognize the means of stopping as seen in col. 4, lines 56-64, such emergency could have been obviously taken for emergency-stopping state.

Grob, to the contrary, mentions no emergency stop at column 4, lines 56-64 at all. Grob, rather, is actually describing breaking off or stopping a running movement or an ongoing application in a *defined* manner, not abruptly, as in an emergency. As Grob, in particular, describes at column 4, lines 56-64:

> Providing PC control including a time critical control and regulation of the robot movement by a real time operating system and a control of a communication with an operator by a standard PC operating system; and
> breaking off or stopping in a defined manner one or both of running movement along a predetermined path and ongoing application operations including: stopping robot movement close to the path.

The method for handling a control unit voltage drop of Grob to which the Examiner refers, at column 4, lines 56-64, in fact, would never be used to stop the robot in an emergency. The method for handling a control unit voltage drop of Grob, rather, is meant to protect the work piece and the robot from damage in the event of a voltage drop, by parking the robot in an orderly manner. In particular, as described in the Abstract:

> In the case of a voltage drop a battery/accumulator operation takes place with running robot movement and optionally application operations broken off or ended in a clearly defined manner. Then, working processes of the control are terminated.

A voltage drop is not an emergency. The last thing to worry about in an emergency is how to handle a voltage drop. The method of Grob lets the robot stop slowly, not abruptly, as would be appropriate in an emergency. Even if Grob experienced an emergency, Grob would still be worrying about stopping and parking the robot in an orderly manner to preserve the work piece. Thus, even if Grob taught an emergency stop, which it does not, there is still no showing in Grob of a "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command."

Independent claim 1, furthermore, recites more than simply an emergency stop command. Independent claim 1, rather, recites a "receiving means place said robot in an emergency-stop state when receiving *even a single set of* communications data expressing an emergency stop command," (emphasis added) Even if it is absolutely true that, in the event of an emergency, the robot of Grob would have been stopped, Grob still does not show a "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command."

The Examiner acknowledges this deficiency of Grob implicitly at page 4 of the final Office Action mailed November 30, 2005, in lines 5 and 6, by attempting to compensate for it by combining Grob with Nagai, saying:

> Nagai et al. in the other hand teaches strongly an emergency stop command in a robotical environment (see section [0035]).

Nagai, however, is not describing *receipt* of an emergency stop command at paragraph [0035], contrary to the Examiner's assertion. Nagai, rather, is discussing the limits on the kinds of commands that information presenting terminal 11, not a robot at all, can *transmit* from itself. In particular, as described in Nagai at paragraph [0035]:

> The information presenting terminal 11 records a log of such commands and telemetry data. Also, the information presenting terminal 11 can only transmit from itself an emergency stop command for the robot arm 1.

Thus, information presenting terminal 11 can only transmit from itself an emergency stop command for the robot arm 1. This is to be contrasted with independent claim 1, in which a "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command."

Indeed, information presenting terminal 11 is not even a robot. Nagai, rather, describes information presenting terminal 11 at paragraph [0034] as:

> The information presenting terminal 11 is an interface computer acting between the earth system 4 and the operating and image display terminals 12, 13 through an RS232C line, and its screen provides a value display of commands and various telemetry data such as position or posture of the tip (the hand portion 1K) of the robot arm 1.

Since the information presenting terminal 11 is not a robot, Nagai shows no "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command."

Nagai, furthermore, hardly describes robot arm 1, which is where receiving means would logically be, at all. Nagai, rather, is about simulating operating sounds of the robot arm for an operator of the robot arm in a form of auditory information. In particular, as described at paragraph [0002]:

> The present invention relates to a robot-arm telemanipulating system to be used in a space station etc., more specifically to a telemanipulating system that presents simulatively generated operating sound of the robot arm to an operator of the robot arm in a form of auditory information.

Since Nagai is about simulating operating sounds of the robot arm for an operator, Nagai would have little interest in "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command," as recited in independent claim 1. Thus, even if Grob and Nagai were combined as proposed by the Examiner, the claimed invention would not result.

The Examiner goes on to assert, in the section labeled 6, at lines 18, 19, and 20 of page 4 of the final Office Action mailed November 30, 2005, that:

> As to the reference not "describe receipt of an emergency stop command" (Nagai et al. had been introduced to demonstrate that the use of emergency stop command is prior art [0035]).

Here again, even if it is true that the use of emergency stop command is prior art, Nagai still does not show how a robot would be stopped, let alone a "receiving means which places a robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command."

Paragraph [0035] of Nagai, in fact, does not mention receiving an emergency stop command at all, let alone show a "receiving means which places a robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command." Paragraph [0035] of Nagai, rather, describes:

> The information presenting terminal 11 records a log of such commands and telemetry data. Also, the information presenting terminal 11 can only transmit from itself an emergency stop command for the robot arm 1.

Since Nagai does not mention *receiving* an emergency stop command, Nagai cannot show a "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command," either.

Finally, the Examiner asserts, in the continuation sheet attached to the Advisory Action mailed March 1, 2006, that:

> In fact, applicant's representative cannot deny the absolute truth that, in the event of an emergency, the robot of Grob would have been stopped, as to the statement that Grob still does not show "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command. Bear in mind that the stopping the robot being done by a stop command.

Here again, even if it is true that the robot of Grob would have been stopped in an emergency, Grob and Nagai still do not show *how* the robot would be stopped, let alone a "receiving means which places a robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command," as recited in independent claim 1. Therefore, even if Grob and Nagai were combined as proposed by the Examiner, the claimed invention would not result. Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of independent claim 1, the Examiner has failed to set forth a prima facie case of unpatentability of independent claim 1 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of independent claim 1 be reversed.

Second, independent claim 1 is patentable over Grob in view of Nagai because the Examiner has not made out a prima facie case of obviousness with respect to the combination of Grob in view of Nagai proposed by the Examiner.

The test for obviousness under 35 U.S.C. § 103 (a) is set forth by the United States Supreme Court in *Graham v. John Deere, Co.,* 383 U.S. 1, 17-18 (1966). As mandated therein, in an obviousness determination under 35 U.S.C. § 103, the scope and content of the prior art are to be determined, the differences between the prior art and the claims at issue are to be ascertained and the level of ordinary skill in the pertinent art resolved. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984). A suggestion, teaching or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." *C.R. Bard, Inc. v. MP3 Sys., Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998). "When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references." *In re Rouffet*, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). Furthermore, the suggestion must be clear and particular; broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120 (Fed. Cir. 2000).

Here, the Examiner has pointed to no evidence, either in the references or the general knowledge of the prior art, of a suggestion or motivation to combine the references in the proposed manner. The broad conclusory statement by the Examiner that "this modification would have enhanced Grob's et al. robot by introducing precisely an emergency stop command, thereby improving the efficiency and reliability of robot controller," in particular, is not "evidence" of a suggestion or motivation to combine the references as required for a finding of obviousness.

Grob, rather, whose purpose is to control the impact on cost and work-piece quality associated with stopping a robot, is not going to make things even worse with an emergency stop command. Grob, rather, is concerned with *recovery* from a stoppage due to a voltage drop or a breakdown, not an emergency stop as recited in independent claim 1.

In Grob, in particular, a mechanism controlled by a program, such as a robot, is terminated in a *controlled* manner by a buffer storage of electrical energy such as an accumulator battery if a stoppage due to a voltage drop or a breakdown occurs. In particular, as described at column 1, lines 19 and 20:

> In the case of a voltage drop or breakdown, it is known to terminate a program in a controlled manner by the buffer storage of electrical energy by means of an accumulator battery.

Thus, in Grob, the robot runs for a little while off of the battery until it completes whatever motion it was performing, or at least gets to a position where it can be parked. In the event of an *emergency* on the other hand, the robot would need to stop *immediately*, regardless of what it was doing. An emergency stop command, therefore, would result in an abrupt stop, not the controlled stop contemplated by Grob. There would be no time, in the event of an emergency stop, to let the robot continue to run for a little while until it completes whatever motion it was performing. Grob is thus completely inappropriate for an emergency stop.

Grob, furthermore, considers even *controlled* stops to present problems, in that recovering from a controlled shutdown requires an experienced operator, is fault-prone and time-consuming. In particular, as described at column 1, 33-38:

> This procedure requires an experienced operator, it is fault-prone and in certain circumstances takes up a considerable amount of time. If a new workpiece is being machined, then the workpiece which has not been completely machined constitutes waste and is therefore also a cost factor.

Thus, since Grob warns us that recovering from a *controlled* stop takes up a considerable amount of *time*, and constitutes *waste*, and raises *costs*, it is submitted that persons of ordinary skill in the art who read Grob at the time the invention was made would not have tried to make the problem even *worse* by modifying Grob as proposed by the Examiner and introducing an *emergency* stop as well.

Grob, furthermore, tries to ameliorate the effects of abrupt stops by stopping the robot in a controlled manner. In particular, as described at column 1, lines 66 and 67, continuing at column 2, lines 1-4:

> The termination or controlled breaking off of the robot movement, etc. here means that the working process as such is not brought to an end and instead the working process is broken off, the movement as such is ended and the robot is stopped, but in a controlled manner, so that there is no danger or damage.

Furthermore, M.P.E.P. § 2143.01 prohibits any proposed modification of a reference that might render the reference unsatisfactory for its intended purpose. As provided therein:

> If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

Grob describes his intended purpose at column 1, lines 59-64 to be:

> A rotor movement taking place and optionally application operations are broken off or stopped in a clearly defined manner, that subsequently working processes of the control are terminated and that exclusively the contents of the working memory at the stoppage time concerning the real time operating system and robot control programs are stored in a mass memory.

If the environment of Grob included an emergency stop, as proposed by the Examiner, there would be no time to break off or stop a robot movement taking place in a clearly defined manner, according to Grob's intended purpose. Nor would there be time to store the contents of the working memory at the stoppage time concerning the real time operating system and robot control programs in a mass memory. If Grob were modified as proposed by the Examiner, rather, the robot movement would stop *immediately*, as would be appropriate in an emergency.

The modification of Grob proposed by the Examiner thus renders Grob unsatisfactory for its intended purpose of stopping the robot movement in a clearly defined manner and storing the contents of the working memory at the stoppage time in a mass memory. Since the modification of Grob proposed by the Examiner would render Grob unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Finally, M.P.E.P. § 2143.01 prohibits any proposed modification of a reference that changes the principle of operation of a reference. As provided therein:

> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Grob describes the principle of operation at column 1, lines 59-64 to be:

> The termination or controlled breaking off of the robot movement, etc. here means that the working process as such is not brought to an end and instead the working process is broken off, the movement as such is ended and the robot is stopped, but in a controlled manner, so that there is no danger or damage.

Here, Grob defines *clearly* the termination or controlled breaking off of the robot movement as *not* bringing the working process to an end abruptly. If Grob were modified as proposed by the Examiner, rather, the robot movement would stop *immediately*, as would be appropriate in an emergency, rather than ending the movement and stopping the robot in a *controlled* manner, so that there is no danger or damage.

The modification of Grob proposed by the Examiner, on the other hand, changes the principle of operation of Grob by stopping the robot movement immediately. Since the modification of Grob proposed by the Examiner would change the principle of operation of Grob, then the teachings of the references are not sufficient to render the claims prima facie obvious, *In re Ratti*. Accordingly, the Examiner has not made out a prima facie case of obviousness with respect to the combination of Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of independent claim 1 be reversed.

B. Dependent Claim 3:

Dependent claim 3 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 3. Dependent claim 3 depends from independent claim 1 and thus includes all of the features of independent claim 1, in addition to further, distinguishing features. Neither Grob nor Nagai, for example, disclose "means are provided for causing each of said two CPUs to monitor the operation of the other CPU," or "in cases where one CPU detects an abnormal operation of the other CPU, said control part is notified of the detection of this abnormality, and the robot is placed in a stopped state," as recited in dependent claim 3. Thus, even if Grob and Nagai were combined, the claimed invention would not result.

Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 3, the Examiner has failed to set forth a prima facie case of unpatentability of dependent claim 3 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of dependent claim 3 be reversed.

C. Independent Claim 4:

First, independent claim 4 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of independent claim 4. Neither Grob nor Nagai, for example, disclose, "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4.

Grob, in particular, does not relate to *stopping* a robot at all, let alone "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4. Grob, rather, relates to *restarting* a robot following the stoppage thereof due to a voltage drop or a breakdown. In particular, as described in Grob at column 1, lines 16 and 17:

> The invention relates to a method for restarting a robot following the stoppage thereof due to a voltage drop.

The Examiner asserts in the section labeled 6, at lines 15, 16, and 17 of page 4 of the final Office Action mailed November 30, 2005, that:

> Although, Grob et al. recognize the means of stopping as seen in col. 4, lines 56-64, such emergency could have been obviously taken for emergency-stopping state.

Grob, to the contrary, mentions no emergency stop at column 4, lines 56-64 at all. Grob, rather, is actually describing breaking off or stopping a running movement or an ongoing application in a *defined* manner, not abruptly, as in an emergency. As Grob, in particular, describes at column 4, lines 56-64:

> Providing PC control including a time critical control and regulation of the robot movement by a real time operating system and a control of a communication with an operator by a standard PC operating system; and
> breaking off or stopping in a defined manner one or both of running movement along a predetermined path and ongoing application operations including: stopping robot movement close to the path.

The method for handling a control unit voltage drop of Grob to which the Examiner refers, at column 4, lines 56-64, in fact, would never be used to stop the robot in an emergency. The method for handling a control unit voltage drop of Grob, rather, is meant to protect the work piece and the robot from damage in the event of a voltage drop, by parking the robot in an orderly manner In particular, as described in the Abstract:

> In the case of a voltage drop a battery/accumulator operation takes place with running robot movement and optionally application operations broken off or ended in a clearly defined manner. Then, working processes of the control are terminated.

A voltage drop is not an emergency. The last thing to worry about in an emergency is how to handle a voltage drop. The method of Grob lets the robot stop slowly, not abruptly, as would be appropriate in an emergency. Even if Grob experienced an emergency, Grob would still be worrying about stopping and parking the robot in an orderly manner to preserve the work piece. Thus, even if Grob taught an emergency stop, which it does not, there is still no showing in Grob of "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4.

Independent claim 4, furthermore, recites more than simply an emergency stop command. Independent claim 4, rather, recites "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command." Even if it is absolutely true that, in the event of an emergency, the robot of Grob would have been stopped, Grob still does not show "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4.

The Examiner acknowledges this deficiency of Grob implicitly at page 4 of the final Office Action mailed November 30, 2005, in lines 5 and 6, by attempting to compensate for it by combining Grob with Nagai, saying:

> Nagai et al. in the other hand teaches strongly an emergency stop command in a robotical environment (see section [0035]).

Nagai, however, is not describing *receipt* of an emergency stop command at paragraph [0035], contrary to the Examiner's assertion. Nagai, rather, is discussing the limits on the kinds of commands that information presenting terminal 11, not a robot at all, can *transmit* from itself. In particular, as described in Nagai at paragraph [0035]:

> The information presenting terminal 11 records a log of such commands and telemetry data. Also, the information presenting terminal 11 can only transmit from itself an emergency stop command for the robot arm 1.

Thus, information presenting terminal 11 can only transmit from itself an emergency stop command for the robot arm 1. This is to be contrasted with independent claim 4, in which "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command."

Indeed, information presenting terminal 11 is not even a robot. Nagai, rather, describes information presenting terminal 11 at paragraph [0034] as:

> The information presenting terminal 11 is an interface computer acting between the earth system 4 and the operating and image display terminals 12, 13 through an RS232C line, and its screen provides a value display of commands and various telemetry data such as position or posture of the tip (the hand portion 1K) of the robot arm 1.

Since the information presenting terminal 11 is not a robot, Nagai shows no "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command."

Nagai, furthermore, hardly describes robot arm 1, which is where receiving means would logically be, at all. Nagai, rather, is about simulating operating sounds of the robot arm for an operator of the robot arm in a form of auditory information. In particular, as described at paragraph [0002]:

> The present invention relates to a robot-arm telemanipulating system to be used in a space station etc., more specifically to a telemanipulating system that presents simulatively generated operating sound of the robot arm to an operator of the robot arm in a form of auditory information.

Since Nagai is about simulating operating sounds of the robot arm for an operator, Nagai would have little interest in "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4. Thus, even if Grob and Nagai were combined as proposed by the Examiner, the claimed invention would not result.

The Examiner goes on to assert, in the section labeled 6, at lines 18, 19, and 20 of page 4 of the final Office Action mailed November 30, 2005, that:

> As to the reference not "describe receipt of an emergency stop command" (Nagai et al. had been introduced to demonstrate that the use of emergency stop command is prior art [0035]).

Here again, even if it is true that the use of emergency stop command is prior art, Nagai still does not show how a robot would be stopped, let alone "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4.

Paragraph [0035] of Nagai, in fact, does not mention receiving an emergency stop command at all, let alone show "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command." Paragraph [0035] of Nagai, rather, describes:

> The information presenting terminal 11 records a log of such commands and telemetry data. Also, the information presenting terminal 11 can only transmit from itself an emergency stop command for the robot arm 1.

Since Nagai does not mention receiving an emergency stop command, Nagai cannot show "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," either.

Finally, the Examiner asserts, in the continuation sheet attached to the Advisory Action mailed March 1, 2006, that:

> In fact, applicant's representative cannot deny the absolute truth that, in the event of an emergency, the robot of Grob would have been stopped, as to the statement that Grob still does not show "receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command. Bear in mind that the stopping the robot being done by a stop command.

Here again, even if it is true that the robot of Grob would have been stopped in an emergency, Grob and Nagai still do not show *how* the robot would be stopped, let alone "at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command," as recited in independent claim 4. Therefore, even if Grob and Nagai were combined as proposed by the Examiner, the claimed invention would not result. Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of independent claim 4, the Examiner has failed to set forth a prima facie case of unpatentability of independent claim 4 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of independent claim 4 be reversed.

Second, independent claim 4 is patentable over Grob in view of Nagai because the Examiner has not made out a prima facie case of obviousness with respect to the combination of Grob in view of Nagai proposed by the Examiner.

Here, the Examiner has pointed to no evidence, either in the references or the general knowledge of the prior art, of a suggestion or motivation to combine the references in the proposed manner. The broad conclusory statement by the Examiner that "this modification would have enhanced Grob's et al. robot by introducing precisely an emergency stop command, thereby improving the efficiency and reliability of robot controller," in particular, is not "evidence" of a suggestion or motivation to combine the references as required for a finding of obviousness.

Grob, rather, whose purpose is to control the impact on cost and work-piece quality associated with stopping a robot, is not going to make things even worse with an emergency stop command. Grob, rather, is concerned with *recovery* from a stoppage due to a voltage drop or a breakdown, not an emergency stop as recited in independent claim 4.

In Grob, in particular, a mechanism controlled by a program, such as a robot, is terminated in a *controlled* manner by a buffer storage of electrical energy such as an accumulator battery if a stoppage due to a voltage drop or a breakdown occurs. In particular, as described at column 1, lines 19 and 20:

> In the case of a voltage drop or breakdown, it is known to terminate a program in a controlled manner by the buffer storage of electrical energy by means of an accumulator battery.

Thus, in Grob, the robot runs for a little while off of the battery until it completes whatever motion it was performing, or at least gets to a position where it can be parked. In the event of an *emergency* on the other hand, the robot would need to stop *immediately*, regardless of what it was doing. An emergency stop command, therefore, would result in an abrupt stop, not the controlled stop contemplated by Grob. There would be no time, in the event of an emergency stop, to let the robot continue to run for a little while until it completes whatever motion it was performing. Grob is thus completely inappropriate for an emergency stop.

Grob, furthermore, considers even *controlled* stops to present problems, in that recovering from a controlled shutdown requires an experienced operator, is fault-prone and time-consuming. In particular, as described at column 1, 33-38:

> This procedure requires an experienced operator, it is fault-prone and in certain circumstances takes up a considerable amount of time. If a new workpiece is being machined, then the workpiece which has not been completely machined constitutes waste and is therefore also a cost factor.

Thus, since Grob warns us that recovering from a *controlled* stop takes up a considerable amount of *time*, and constitutes *waste*, and raises *costs*, it is submitted that persons of ordinary skill in the art who read Grob at the time the invention was made would not have tried to make the problem even *worse* by modifying Grob as proposed by the Examiner and introducing an *emergency* stop as well.

Grob, furthermore, tries to ameliorate the effects of abrupt stops by stopping the robot in a controlled manner. In particular, as described at column 1, lines 66 and 67, continuing at column 2, lines 1-4:

> The termination or controlled breaking off of the robot movement, etc. here means that the working process as such is not brought to an end and instead the working process is broken off, the movement as such is ended and the robot is stopped, but in a controlled manner, so that there is no danger or damage.

Furthermore, M.P.E.P. § 2143.01 prohibits any proposed modification of a reference that might render the reference unsatisfactory for its intended purpose. As provided therein:

> If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

Grob describes his intended purpose at column 1, lines 59-64 to be:

> A rotor movement taking place and optionally application operations are broken off or stopped in a clearly defined manner, that subsequently working processes of the control are terminated and that exclusively the contents of the working memory at the stoppage time concerning the real time operating system and robot control programs are stored in a mass memory.

If the environment of Grob included an emergency stop, as proposed by the Examiner, there would be no time to break off or stop a robot movement taking place in a clearly defined manner, according to Grob's intended purpose. Nor would there be time to store the contents of the working memory at the stoppage time concerning the real time operating system and robot control programs in a mass memory. If Grob were modified as proposed by the Examiner, rather, the robot movement would stop *immediately*, as would be appropriate in an emergency.

The modification of Grob proposed by the Examiner thus renders Grob unsatisfactory for its intended purpose of stopping the robot movement in a clearly defined manner and storing the contents of the working memory at the stoppage time in a mass memory. Since the modification of Grob proposed by the Examiner would render Grob unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Finally, M.P.E.P. § 2143.01 prohibits any proposed modification of a reference that changes the principle of operation of a reference. As provided therein:

> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Grob describes the principle of operation at column 1, lines 59-64 to be:

> The termination or controlled breaking off of the robot movement, etc. here means that the working process as such is not brought to an end and instead the working process is broken off, the movement as such is ended and the robot is stopped, but in a controlled manner, so that there is no danger or damage.

Here, Grob defines *clearly* the termination or controlled breaking off of the robot movement as *not* bringing the working process to an end abruptly. If Grob were modified as proposed by the Examiner, rather, the robot movement would stop *immediately*, as would be appropriate in an emergency, rather than ending the movement and stopping the robot in a *controlled* manner, so that there is no danger or damage.

The modification of Grob proposed by the Examiner, on the other hand, changes the principle of operation of Grob by stopping the robot movement immediately. Since the modification of Grob proposed by the Examiner would change the principle of operation of Grob, then the teachings of the references are not sufficient to render the claims prima facie obvious, *In re Ratti*. Accordingly, the Examiner has not made out a prima facie case of obviousness with respect to the combination of Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of independent claim 4 be reversed.

D. Dependent Claim 6:

Dependent claim 6 is patentable over Grob in view of Nagai because neither Grob nor

Nagai, nor their combination, disclose all of the features of dependent claim 6. Dependent claim 6 depends from independent claim 4 and thus includes all of the features of independent claim 4, in addition to further, distinguishing features. Neither Grob nor Nagai, for example, disclose "means are provided for causing each of said two CPUs to monitor the operation of the other CPU," or "in cases where one CPU detects the abnormal operation of the other CPU, said control part is notified of the detection of this abnormality, and the robot is placed in a stopped state," as recited in dependent claim 6. Thus, even if Grob and Nagai were combined, the claimed invention would not result.

Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 6, the Examiner has failed to set forth a prima facie case of unpatentability of dependent claim 6 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of dependent claim 6 be reversed.

E. Dependent Claim 7:

Dependent claim 7 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 7. Dependent claim 7 depends from independent claim 1 and thus includes all of the features of independent claim 1, in addition to further, distinguishing features. Neither Grob nor Nagai, for example, disclose "said robot is stopped by emergency stop control circuit in cases where the receiving means disposed in said control part cannot receive said communications data expressing a normal state for a specified period of time," as recited in dependent claim 7. Thus, even if Grob and Nagai were combined, the claimed invention would not result.

Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 7, the Examiner has failed to set forth a prima facie case of unpatentability of dependent claim 7 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of dependent claim 7 be reversed.

G. Dependent Claim 11:

Dependent claim 11 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 11. Dependent claim 11 depends from independent claim 1 and thus includes all of the features of independent claim 1, in addition to further, distinguishing features. Neither Grob nor Nagai, for example, disclose "wherein the timing of transmission from said portable teaching operating part to said control part is varied depending on urgency of the communications content," as recited in dependent claim 11. Thus, even if Grob and Nagai were combined, the claimed invention would not result.

Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 11, the Examiner has failed to set forth a prima facie case of unpatentability of dependent claim 11 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of dependent claim 11 be reversed.

F. Dependent Claim 12:

Dependent claim 12 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 12. Dependent claim 12 depends from independent claim 4 and thus includes all of the features of independent claim 4, in addition to further, distinguishing features. Neither Grob nor Nagai, for example, disclose "said robot is stopped by emergency stop control circuit in cases where the receiving means disposed in said control part cannot receive said communications data expressing a normal state for a specified period of time," as recited in dependent claim 12. Thus, even if Grob and Nagai were combined, the claimed invention would not result.

Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 12, the Examiner has failed to set forth a prima facie case of unpatentability of dependent claim 12 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of dependent claim 12 be reversed.

G. Dependent Claim 14:

Dependent claim 14 is patentable over Grob in view of Nagai because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 14. Dependent claim 14 depends from independent claim 4 and thus includes all of the features of independent claim 4, in addition to further, distinguishing features. Neither Grob nor Nagai, for example, disclose "the timing of transmission from said portable teaching operating part to said control part is varied depending on urgency of the communications content," as recited in dependent claim 14. Thus, even if Grob and Nagai were combined, the claimed invention would not result.

Accordingly, because neither Grob nor Nagai, nor their combination, disclose all of the features of dependent claim 14, the Examiner has failed to set forth a prima facie case of unpatentability of dependent claim 14 by Grob in view of Nagai. Appellants, therefore, respectfully request that the rejection of dependent claim 14 be reversed.

For the forgoing reasons, Appellants respectfully request that the Board reverse the outstanding rejections of the claims of this application.

CONTINGENT AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT AND

CONTINGENT PETITION FOR EXTENSION OF TIME

Unless a check for the present Brief on Appeal is submitted herewith for the fee required under 37 C.F.R. § 41.20(b)(2), please charge said fee to Deposit Account No. 19-3935.

Appellants hereby petition for any extension of time that may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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VIII. CLAIMS APPENDIX

1. (Original) A robot controller which is constructed so that a control part for controlling a robot and a portable teaching operating part communicate with each other by wireless communications, wherein

said portable teaching operating part comprises:

emergency stop operating means which place said robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of said robot;

emergency stop release operating means which restore said robot to a state in which its movement is possible by releasing said emergency-stop state;

a plurality of communications data generating circuits which respectively generate communications data expressing an emergency stop command based on operations for said emergency stop operating means, and which respectively generate communications data expressing an emergency stop release command based on operations for said emergency stop release operating means; and

transmitting means which transmit communications data expressing said emergency stop command and communications data expressing said emergency stop release command to said control part by wireless communications; and

said control part comprises:

receiving means which receive communications data expressing said emergency stop command and communications data expressing said emergency stop release command from said transmitting means;

wherein said receiving means place said robot in an emergency-stop state when receiving even a single set of communications data expressing an emergency stop command generated by said plurality of communications data generating circuits.

2. (Original) The robot controller according to claim 1, wherein an emergency stop signal is generated when an operation for the purpose of emergency stopping is performed on said emergency stop operating means, and at least one of said plurality of generating circuits receives said emergency stop signal via a CPU, and generates communications data expressing an emergency stop command.

3. (Original) The robot controller according to claim 1, wherein

an emergency stop signal is generated when an operation for the purpose of emergency stopping is performed for said emergency stop operating means, and at least two of said plurality of generating circuits receive said emergency stop signal via CPUs, and respectively generate communications data expressing an emergency stop command;

means are provided for causing each of said two CPUs to monitor the operation of the other CPU; and

in cases where one CPU detects an abnormal operation of the other CPU, said control part is notified of the detection of this abnormality, and the robot is placed in a stopped state.

4. (Original) A robot controller which is constructed so that a control part for controlling a robot and a portable teaching operating part communicate with each other by wireless communications, wherein

said portable teaching operating part comprises:

emergency stop operating means which place said robot in an emergency-stop state by cutting off the supply of electric power to the driving motors of said robot;

emergency stop release operating means which restore said robot to a state in which its movement is possible by releasing said emergency-stop state;

a plurality of communications data generating circuits which respectively generate communications data expressing an emergency stop command based on operations for said emergency stop operating means, and which respectively generate communications data expressing an emergency stop release command based on operations for said emergency stop release operating means; and also

a plurality of transmitting means which respectively correspond to said plurality of communications data generating circuits, and which transmit communications data expressing said emergency stop command and communications data expressing said emergency stop release command to said control part by wireless communications; and

said control part comprises:

a plurality of receiving means which respectively correspond to each of said plurality of transmitting means, and which receive communications data from said transmitting means;

wherein at least one of the receiving means place said robot in an emergency-stop state when receiving communications data expressing an emergency stop command.

5. (Original) The robot controller according to claim 4, wherein an emergency stop signal is generated when an operation for the purpose of emergency stopping is performed for

said emergency stop operating means, and at least one of said plurality of generating circuits receives said emergency stop signal via a CPU, and generates communications data expressing an emergency stop command.

6. (Original) The robot controller according to claim 4, wherein

an emergency stop signal is generated when an operation for the purpose of emergency stopping is performed for said emergency stop operating means, at least two of said plurality of generating circuits receive said emergency stop signal via CPUs, and respectively generate communications data expressing an emergency stop command;

means are provided for causing each of said two CPUs to monitor the operation of the other CPU; and

in cases where one CPU detects the abnormal operation of the other CPU, said control part is notified of the detection of this abnormality, and the robot is placed in a stopped state.

7. (Previously presented) The robot controller according to claim 1, wherein

said generating circuits generate communications data expressing a normal state in cases where no operation that places the robot in an emergency-stop state has been performed for the emergency stop operating means disposed in said portable teaching operating part, and said communications data expressing a normal state is transmitted by wireless communications to said control part from said transmitting means at a transmission frequency that is not less than a specified transmission frequency; and

said robot is stopped by emergency stop control circuit in cases where the receiving means disposed in said control part cannot receive said communications data expressing a normal state for a specified period of time.

8. (Previously presented) The robot controller according to claim 1, wherein the communications data expressing an emergency stop command received by the receiving means disposed in said control part is sent to a plurality of emergency stop control CPUs installed in correspondence with each of the said plurality of generating circuits, and the CPUs that receive communications data expressing an emergency stop command place said robot in an emergency-stop state.

9. (Original) The robot controller according to claim 8, wherein each of the plurality of emergency stop control CPUs disposed in said control part monitors the operating state of the

other emergency stop control CPUs, and the robot is stopped when an operating abnormality of any of the CPUs is detected.

10. (Original) The robot controller according to claim 8, wherein a CPU other than said emergency stop control CPUs monitors the operating state of the emergency stop control CPUs, and the robot is stopped when an operating abnormality of at least one of the emergency stop control CPUs is detected.

11. (Previously presented) The robot controller according to claim 1, wherein the timing of transmission from said portable teaching operating part to said control part is varied depending on urgency of the communications content.

12. (Previously presented) The robot controller according to claim 4, wherein

said generating circuits generate communications data expressing a normal state in cases where no operation that places the robot in an emergency-stop state has been performed for the emergency stop operating means disposed in said portable teaching operating part, and said communications data expressing a normal state is transmitted by wireless communications to said control part from said transmitting means at a transmission frequency that is not less than a specified transmission frequency; and

said robot is stopped by emergency stop control circuit in cases where the receiving means disposed in said control part cannot receive said communications data expressing a normal state for a specified period of time.

13. (Previously presented) The robot controller according to claim 4, wherein the communications data expressing an emergency stop command received by the receiving means disposed in said control part is sent to a plurality of emergency stop control CPUs installed in correspondence with each of the said plurality of generating circuits, and the CPUs that receive communications data expressing an emergency stop command place said robot in an emergency-stop state.

14. (Previously presented) The robot controller according to claim 4, wherein the timing of transmission from said portable teaching operating part to said control part is varied depending on urgency of the communications content.

IX. EVIDENCE APPENDIX

Not applicable.

X. RELATED PROCEEDINGS APPENDIX

Not applicable.